AMENDMENTS TO THE CLAIMS

1. (presently amended) An electrical machine comprising:

a magnetically permeable core, the core being elongated to thereby define a lengthwise direction and a core profile that is transverse to the lengthwise direction, the core profile having a surface that is bowed outward; ~~and~~

coils that are wound about the core profile and sequentially disposed along the lengthwise direction; and

~~the core profile having a surface that is bowed outward~~

an elongated permanent magnet parallel with the core and defining a magnet profile transverse to the lengthwise direction, the magnet profile having a surface that is adjacent and facing the outwardly-bowed surface of the core profile.

2 (original): The electrical machine of claim 1 further comprising an axis of rotation, and wherein the elongated core is arcuate about the axis, such that the coils are toroidally wound about the core and sequentially disposed about the axis.

3 (cancelled)

4 (original): The electrical machine of claim 1 further comprising a cavity extending lengthwise through the core and also comprising two ports extending from the cavity to outside the core.

5 (cancelled)

6 (currently amended): The electrical machine of claim 1 ~~further comprising an elongated magnet that is parallel with the core and that has a~~ wherein the permanent magnet profile ~~that~~ overhangs the core profile.

7 (original): The electrical machine of claim 1 wherein the core profile is surrounded on three sides by ~~a~~ the magnet.

8 (original): The electrical machine of claim 7 wherein the core profile is surrounded on four sides by ~~a~~ the magnet.

9 (cancelled)

10 (currently amended): The electrical machine of claim 1 ~~further comprising an elongated magnet that is parallel with the core and that has a magnet profile of which a surface~~ wherein the surface of the magnet profile is bowed inwardly~~, the inwardly-bowed surface of the magnet being~~ and adjacent and facing the outwardly-bowed surface of the core.

11 (original): The electrical machine of claim 10 wherein a spacing between the magnet and the core is uniform along at least a portion of the outwardly-bowed surface of the core profile.

12 (original): The electrical machine of claim 10 wherein the magnet is magnetized such that each flux line is generally perpendicular to the section of the magnet surface that the flux line intersects.

13 (cancelled)

14 (cancelled)

15 (cancelled)

16 (cancelled)

17 (cancelled)

18 (currently amended): The electrical machine of claim 1 further comprising a second elongated core ~~identical to and~~ parallel with the first core, and further comprising three ~~identical~~ elongated magnets ~~that are~~ parallel with the cores, the cores being interspersed between the magnets.

19 (currently amended): An electrical machine comprising:

a magnetically permeable core, the core being elongated to thereby define a lengthwise direction and a profile that is transverse to the lengthwise direction;

coils that are wound about the core profile and sequentially disposed along the lengthwise direction; and

an elongated permanent magnet ~~that is~~ parallel with the core and ~~that has~~ defining a magnet profile of which a surface is adjacent and facing and overhanging ~~that overhangs~~ the core profile.

20 (currently amended): An electrical machine comprising:

a magnetically permeable core, the core being elongated to thereby define a lengthwise direction and a profile that is transverse to the lengthwise direction; and

coils that are wound about the core profile and sequentially disposed along the lengthwise direction;

the core profile being surrounded on three sides by a permanent magnet.

21 (re-presented - formerly claim 5): An electrical machine comprising:

a magnetically permeable core, the core being elongated to thereby define a lengthwise direction and a profile that is transverse to the lengthwise direction; and

coils that are wound about the core profile and sequentially disposed along the lengthwise direction;

the core profile having a surface that is bowed outward; and

the core comprising a first section that is resistant to eddy currents that would circulate along only either of two opposite faces of the first section, and further comprising a second section that is resistant to eddy currents that would circulate along any face of the second section.

22 (new): The electrical machine of claim 21 further comprising an axis of rotation, and wherein the elongated core is ring-shaped and centered on the axis, such that the coils are toroidally wound about the core and sequentially disposed about the axis.

23 (new): The electrical machine of claim 21 further comprising a cavity extending lengthwise through the core and also comprising two ports extending from the cavity to outside the core.

24 (new): The electrical machine of claim 21 further comprising an elongated magnet that is parallel with the core and that has a magnet profile that overhangs the core profile.

25 (new): The electrical machine of claim 21 wherein the core profile is surrounded on three sides by a permanent magnet.

26 (new): The electrical machine of claim 21 further comprising coil-free spaces between adjacent coils, and further comprising brackets installed about the coil-free spaces, the brackets configured to provide a flat peripheral surface defined by the peripheral surfaces of the coils and the brackets.

27 (new): The electrical machine of claim 21 further comprising a second elongated core parallel with the first core, and further comprising three elongated magnets parallel with the cores, the cores being interspersed between the magnets.

28 (re-presented - formerly claim 15) An electrical machine comprising:

a magnetically permeable core, the core being elongated to thereby define a lengthwise direction and a profile that is transverse to the lengthwise direction, the core profile having a surface that is bowed outward;

coils that are wound about the core profile and sequentially disposed along the lengthwise direction;

coil-free spaces between adjacent coils; and

brackets installed about the coil-free spaces, the brackets configured to provide a flat peripheral surface defined by the peripheral surfaces of the coils and the brackets.

29 (re-presented - formerly claim 16) The electrical machine of claim 28 wherein the bracket is magnetically-permeable.

30 (new): The electrical machine of claim 28 wherein the bracket is plastic.

31 (new): The electrical machine of claim 28 further comprising an axis of rotation, and wherein the elongated core is ring-shaped and centered on the axis, such that the coils are toroidally wound about the core and sequentially disposed about the axis.

32 (new): The electrical machine of claim 28 further an elongated permanent magnet parallel with the core and defining a magnet profile transverse to the lengthwise direction, the magnet profile having a surface that is adjacent and facing the outwardly-bowed surface of the core profile.

33 (new): The electrical machine of claim 28 further comprising a second elongated core parallel with the first core, and further comprising three elongated magnets that are parallel with the cores, the cores being interspersed between the magnets.

34 (re-presented - formerly claim 18): An electrical machine comprising:

a magnetically permeable first core, the core being elongated to thereby define a lengthwise direction and a profile that is transverse to the lengthwise direction, the core profile having a surface that is bowed outward;

coils that are wound about the core profile and sequentially disposed along the lengthwise direction;

a second elongated core parallel with the first core; and

three elongated magnets that are parallel with the cores, the cores being interspersed between the magnets.

35 (new): The electrical machine of claim 40 further comprising an axis of rotation, and wherein the elongated core is ring-shaped and centered on the axis, such that the coils are toroidally wound about the core and sequentially disposed about the axis.

36 (new): The electrical machine of claim 40 wherein the magnets have profiles that overhang the respective core profiles.

37 (new): An electrical machine comprising:

a magnetically permeable core, the core being elongated to thereby define a lengthwise direction and a profile that is transverse to the lengthwise direction, the elongated core being arcuate about an axis of rotation; and

coils that are wound about the core profile and sequentially disposed along the lengthwise direction;

the core comprising a first section that is resistant to eddy currents that would circulate along only either of two opposite faces of the first section, and further comprising a second section that is resistant to eddy currents that would circulate along any face of the second section.

38 (new): An electrical machine comprising:

a magnetically permeable core, the core being elongated to thereby define a lengthwise direction and a profile that is transverse to the lengthwise direction;

coils that are wound about the core profile and sequentially disposed along the lengthwise direction;

coil-free spaces between adjacent coils; and

brackets installed about the coil-free spaces, the brackets configured to provide a flat peripheral surface defined by the peripheral surfaces of the coils and the brackets.

39 (new): An electrical machine comprising:

a magnetically permeable first core, the core being elongated to thereby define a lengthwise direction and a profile that is transverse to the lengthwise direction;

coils that are wound about the core profile and sequentially disposed along the lengthwise direction;

a second elongated core parallel with the first core; and

three elongated magnets that are parallel with the cores, the cores being interspersed between the magnets.